

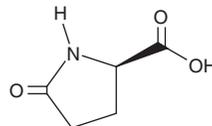
# PRODUCT INFORMATION



## D-Pyroglutamic Acid

Item No. 31170

**CAS Registry No.:** 4042-36-8  
**Formal Name:** 5-oxo-D-proline  
**Synonyms:** (R)-5-Oxoproline, (+)-Pyroglutamic Acid  
**MF:** C<sub>5</sub>H<sub>7</sub>NO<sub>3</sub>  
**FW:** 129.1  
**Purity:** ≥98%  
**Supplied as:** A solid  
**Storage:** -20°C  
**Stability:** ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

D-Pyroglutamic acid is supplied as a solid. A stock solution may be made by dissolving the D-pyroglutamic acid in the solvent of choice, which should be purged with an inert gas. D-Pyroglutamic acid is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of D-pyroglutamic acid in these solvents is approximately 10 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of D-pyroglutamic acid can be prepared by directly dissolving the solid in aqueous buffers. The solubility of D-pyroglutamic acid in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

D-Pyroglutamic acid, also known as 5-oxo-D-proline, is a metabolite of D-glutamate.<sup>1</sup> It is formed from D-glutamate by D-glutamate cyclase. The levels of D-pyroglutamic acid are increased in the urine of patients with nascent metabolic syndrome and the plasma of patients with end-stage renal disease.<sup>2,3</sup>

### References

1. Ariyoshi, M., Katane, M., Hamase, K., *et al.* D-Glutamate is metabolized in the heart mitochondria. *Sci. Rep.* **7**, 43911 (2017).
2. Shim, K., Gulhar, R., and Jialal, I. Exploratory metabolomics of nascent metabolic syndrome. *J. Diabetes Complications* **33(3)**, 212-216 (2019).
3. Palekar, A.G., Tate, S.S., Sullivan, J.F., *et al.* Accumulation of 5-oxo-L-proline and 5-oxo-D-proline in the blood plasma in end stage renal disease. *Biochem. Med.* **14(3)**, 339-345 (1975).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

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